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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,047	12/10/2003	Hyuk Tark Kwon	AD7076 USNA	8995

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E I DU PONT DE NEMOURS AND COMPANY  
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WILMINGTON, DE 19805

EXAMINER
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WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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11/07/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/734,047	<b>Applicant(s)</b> KWON, HYUK TARK	
	<b>Examiner</b> JEFFREY WOLLSCHLAGER	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3,10-12,29,33-35,37 and 42-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,10-12,29,33-35,37 and 42-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's amendment to the claims filed July 18, 2008 has been entered. Claims 3, 10, 11, 29, 33, 37, and 42-46 are currently amended. Claims 1, 2, 4-9, 13-28, 30-32, 36, 38-41 and 47-54 have been canceled.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 10-12, 33, 37, and 42-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Domine et al. (US 2004/0161623) in view of Suzuki et al. (US 4,079,850) and Hestehave et al. (US 4,759,708) and either one of Rainwater et al. (US 3,233,416) or Chesser (US 3,450,805).

Regarding claims 3 and 33, Domine et al. teach ionomer laminates and articles formed from ionomer laminates (Abstract; Figure 1). Domine et al. disclose the laminates may be formed by blow molding methods (paragraph [0007]; Figure 8) into containers (paragraphs [0097, 0124, 0136]). Domine et al. also disclose the thickness of the ionomer outer layer may be up to 6000 um/6 mm (paragraph [0036]). Domine et al. also disclose a blow mold temperature as low as 10 °C [paragraph [0104]]. A wide variety of ionomers are disclosed including ethylene methacrylic acid copolymer ionomers (paragraph [0037]). Domine et al. disclose materials such as polypropylene, polyethylene and polycarbonates can form the layer

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behind the ionomer layer (paragraph [0052]). Domine et al. do not provide details of the blow molding method (paragraph [0097]).

However, Suzuki et al., teach a method for manufacturing a multilayer container comprising: heating each of at least two thermoplastic polymers to a temperature above the melt temperature of each to obtain a homogeneous melt of each of the at least two polymers; co-extruding the at least two thermoplastic polymers through a co-extrusion blow molding head into an open mold; using the extrusion blow molding machine to blow mold the at least two thermoplastic materials to form a blow molded structure having an internal surface and an external surface; a mold having a pinch off area and dual pinching means for pinching the outer layer in a manner such that the outer layer forces the at least one other layer out of the pinch off area (Abstract; Figures 2-A and 2-B; col. 1, lines 64-col. 2, line 3; col. 2, lines 10-30 and 50-67; col. 4, lines 2-19 and 49-67). Suzuki et al. also disclose a mold temperature of 12 °C (col. 10, lines 15-18)

Furthermore, each of Rainwater et al. (col. 1, lines 8-46; col. 2, lines 14-18 and lines 66-70; col. 3, lines 37-42) and Chesser (Abstract; col. 1, lines 31-63; col. 2, lines 1-44; col. 3, lines 26-30 and 60-74) teach a method of blow molding articles where cold air is employed to blow the article while simultaneously providing a means of cooling the blow molded structure. Rainwater et al. employ blowing air at a temperature of about 20 °F (col. 3, lines 41-43).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the blow molding teachings of Suzuki et al. and either of Rainwater et al. or Chesser to have produced the blow molded article taught by Domine et al. since Suzuki et al. disclose their method assists with fusion bonding of the pinched off portions (col. 2, lines 10-20) and Rainwater et al. disclose that cold air reduces

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scrap caused by condensation on the wall of the mold (col. 3, lines 1-3 ) and promotes rapid cooling of the article (col. 1, lines 8-21).

Additionally, Domine et al. do not teach utilizing a jacketed blow pin as claimed. However, Hestehave et al. teach a method of extrusion blow molding wherein the blow pin is jacketed along its length (Abstract; Figure 4).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Domine et al. and to have employed a jacketed blow pin, as suggested by Hestehave et al., because Hestehave et al. teach a jacketed blow pin provides further cooling and temperature control of the blow molding process (col. 2, lines 45-51; col. 2, lines 57-62; col. 3, lines 18-24 and 40-44).

As to claims 10 and 11, Domine et al. disclose employment of an ionomer (paragraph [0057]).

As to claim 12, Suzuki et al. disclose the claimed pinched shape (Figure 2B).

As to claim 29, the examiner notes that unpolished molds, for example, are conventional in the art and that molds disclosed intrinsically have some degree of surface imperfections. Furthermore, it is well known in the art to provide a mold with a roughened surface in applications where a textured external article is desired.

As to claim 31, Rainwater allow for the blowing and cooling gas to escape from the inside of the mold (col. 2, lines 14-19; col. 4, lines 66-75).

As to claim 32, Rainwater et al. (Figure 3) and Chesser (Figure 2) employ a blow-pin/nozzle for discharging the cold gas into the inner cavity of the parison. The examiner notes that such a claimed configuration is well known in the art and that many equivalent alternative means of injecting blow gas into a parison are conventionally employed.

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As to claims 37, Domine et al. (paragraph [0052]) and Suzuki et al. (col. 3, lines 26-47; col. 4, lines 48-66; col. 5, lines 1-51) disclose a variety of inner layers meeting the claim limitations.

As to claim 42, Domine et al. disclose an ionomer as the outer layer (Figure 1; Abstract; paragraph [0037]).

As to claims 43 and 44, Domine et al disclose an ionomer layer thickness range of 25 um to 6000 um depending on the application (paragraph [0036]).

As to claims 45 and 46, Rainwater et al. (col. 1, lines 8-46; col. 2, lines 14-18 and 66-70; col. 3, lines 37-42) and Chesser (Abstract; col. 1, lines 31-63; col. 2, lines 1-44; col. 3 lines 26-30 and 60-74) disclose cold air as the gas.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Domine et al. (US 2004/0161623) in view of Suzuki et al. (US 4,079,850) and Hestehave et al. (US 4,759,708) and either one of Rainwater et al. (US 3,233,416) or Chesser (US 3,450,805), as applied to claims 3, 10-12, 33, 37, and 42-46 above, and further in view of Sugawara et al. (6,303,071).

As to claim 29, the combination teaches the method of claim 29 as set forth above. In an alternative interpretation of the claim, Domine et al. do not expressly teach an active step of roughening the surface of the mold. However, Sugawara et al. teach an analogous method where they emboss/roughen the surface of the mold in order to produce a desired surface feature on the molded surface (col. 2, lines 53-59 and col. 8, lines 61-67).

Therefore, it would have been prima facie obvious to one having ordinary skill in the art at the time of the claimed invention to modify the method of Domine et al. with the embossed/roughened mold surface taught by Sugawara et al. for the purpose of producing a desired surface feature on the molded structure.

Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Domine et al. (US 2004/0161623) in view of Suzuki et al. (US 4,079,850) and Hestehave et al. (US 4,759,708) and either one of Rainwater et al. (US 3,233,416) or Chesser (US 3,450,805), as applied to claims 3, 10-12, 29, 33, 37, and 42-46 above, and further in view of any one of Moslo (US 3,116,877) or De'ath (US 6,071,463) or Ryder (US 4,091,059).

.As to claims 34 and 35, the combination teaches the method set forth above. Domine et al. do not teach a blow pin that is covered with a channel for allowing the escape of gas from inside the blow molded structure. However, Moslo teaches a method of blow molding a parison wherein the blow pin (i.e. the core pin is also used for blowing) is structured and operated to allow for the air to vent back through the nozzle (Figure 3; Figure 7; col. 1, lines 25-34; col. 5, lines 47-49; col. 5, lines 58-col. 6, lines 24); De'ath teaches a method wherein it is disclosed that venting air through/between roughened mold surfaces (i.e. also reasonably interpreted as a cut channel) is an equivalent alternative method of venting known in the molding arts (col. 3, lines 13-24; Figure 4); and Ryder teaches a method of blow molding wherein a blow pin (28) has a channel (29) to allow the escape of gas from the inside of the molded structure.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Domine et al. and to have utilized a roughened surface/cut channel for venting air from the blow molded container at the location where the blow pin and the blow mold come together as suggested by De'ath since De'ath suggest that venting air through/between roughened mold surfaces is an equivalent alternative method of venting known in the molding arts.

Alternatively, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Domine et al. and to

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have employed a jacketed blow pin having the capacity to vent back through the nozzle as suggested by Moslo for the purpose of maintaining the parison in the desired condition while facilitating effective temperature control and removal of the gas pressure prior to opening the mold. Alternatively, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a blow molding nozzle having a channel as set forth by Ryder in the method of Domine et al. for the purpose of venting the molded structure in a simple and art recognized suitable manner.

### ***Response to Arguments***

Applicant's arguments filed July 18, 2008 regarding the Moslo reference, as utilized in the rejection of claim 33, have been fully considered, and they are persuasive. Accordingly, the Moslo reference has been withdrawn. However, a new grounds of rejection has been made as set forth above. Applicant's arguments regarding the De'ath reference have been fully considered, but they are not persuasive. The examiner maintains that De'ath suggests that venting air through roughened mold surfaces is an equivalent alternative method of venting known in the molding arts and that such a roughened surface in combination with the Domine et al. reference suggest the argued limitation.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./

Examiner, Art Unit 1791

November 5, 2008

/Monica A Huson/

Primary Examiner, Art Unit 1791